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AMIN. TUROCY & CALVIN, LLP
24TH FLOOR, NATIONAL CITY CENTER
1900 EAST NINTH STREET
CLEVELAND, OH 44114

EXAMINER	
WOOD, WILLIAM H	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/820,519	HORVITZ, ERIC J.	
	Examiner	Art Unit	
	William H. Wood	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-40 and 42-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-40 and 42-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1, 3-40 and 42-45 are pending and have been examined.

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 15 and 39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims are software *per se* and do not constitute hardware.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16, 17-38, 40 and 42-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: downloading steps as indicated by the claim preamble.

Claims 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: installing steps as indicated by the independent claim preamble.

Claims 22-31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: distributing steps as indicated by the independent claim preamble.

Claims 32-38 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: distributing steps as indicated by the independent claim preamble.

Claims 40 and 42-45 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: downloading steps as indicated by the independent claim preamble.

The claims indicated above do not accomplish their stated objectives.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3, 4-19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014) in view of **Drewry** et al. (USPN 5,925,100) in further view of **Cherkasova** et al. (USPN 6,425,057).

Claim 1

Robinson disclosed a method for downloading resources, each having a size, from a source to an intermediate storage facility, having a finite storage capacity *(column 1, line 65 to column 2, line 31; an advertisement is the downloaded resource)*, the method comprising:

determining a probability of using a resource *(column 2, lines 9-27)*, the probability in part determined via;

accepting at least one user-based factor *(column 2, lines 58-60; column 7, lines 52-65; column 15, lines 20-28)*;

accepting at least one resource-based factor *(column 3, lines 3-15; column 17, lines 2-11)*; and

maximizing an expected value of downloaded resources via utilization of the at least one user-based and the at least one resource-based factor *(column 1, lines 25-63, in particular column 1, lines 57-63)*

evaluating a cost of accessing resources in an unloaded condition *(column 1, lines 57-63; column 1, lines 52-56; the cost of not getting the advertisement).*

Robinson did not explicitly state minimize total request-to-receive time.

Drewry demonstrated that it was known at the time of invention to minimize an expected cost of not having a needed resource (column 5, line 66 to column 6 line 51, "On the Internet and for Interactive TV (ITV), the networks employed are relatively slow and, thus, incur a high latency (including slow or delayed transmission time) ...", thus prefetching to reduce transmission latency effects; further note column 7, lines 12-20; and caching effectively column 12, line 63 to column 16, line 10). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the web/network based customized advertisement system of **Robinson** with prefetching dependent or likely to be used media or application objects as found in **Drewry**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to maximize benefit by reducing latency of networks (**Drewry**: column 6, lines 4-7).

Cherkasova demonstrated that it was known at the time of invention to calculate and enhancement rate based upon size, using, and cost of later download (column 3, lines 13-23). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the predictive advertisement delivery system of **Robinson** and the prefetching and caching of **Drewry** with efficient caching schemes as found in **Cherkasova**'s teaching thus reducing total request-to-receive time. This implementation would have been obvious because one of ordinary skill in the art would be motivated to further improve network latency (**Cherkasova**: column 3, lines 13-23).

Claim 3

Robinson disclosed the method of claim 3 further comprising determining the probabilities that a user belongs to various user type classes *(column 2, lines 58-60; column 7, lines 52-65; column 15, lines 20-28).*

Claim 4

Robinson did not explicitly state the method of claim 3 wherein the probabilities that user belongs to various user type classes are determined based on evidence using a Bayesian network. Official Notice is taken that it was known at the time of invention to make use of Bayesian networks for probability. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the probability system of **Robinson** with

Bayesian probability. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use all available technologies in order to accurately determine probability.

Claim 5

Robinson disclosed the method of claim 3 wherein the at least one resource-based factor includes probabilities that users of the various user type classes will use the resource at least once *(column 3, lines 3-15)*.

Claim 6

Robinson disclosed the method of claim 1 wherein the at least one resource-based factor includes probabilities that users of the various user type classes will use the resource at least once *(column 3, lines 3-15)*.

Claim 7

Robinson disclosed the method of claim 3 wherein the at least one resource-based factor is a probability that the resource will be used at least once and is based on a sum, over all user type classes, of a product of (a) a probability that the resource is used at least once, given that an application to which the resource belongs is used at least once, by a user of the user type class *(column 3, lines 3-15; column 17, lines 2-11)*, [(b)] a probability that the application to which the resource belongs is used at least once by a user of the user type

class *(column 3, lines 3-15; column 17, lines 2-11)*, and (c) a probability that the user belongs to the user type class *(column 2, lines 58-60; column 7, lines 52-65; column 15, lines 20-28)*.

Claim 8

Robinson disclosed the method of claim 1 wherein the at least one resource-based factor includes an association of each of the resources to at least one application class *(column 2, lines 48-56)*.

Claim 9

Robinson did not explicitly state the method of claim 8 wherein the at least one resource-based factor includes an indication, for each of the resources, of whether the resource is a core component or an optional component of the application class with which it is associated. **Drewry** demonstrated that it was known at the time of invention to provide optional and required components (column 10, lines 12-14). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the web/network based customized advertisement system of **Robinson** with prefetching dependent or likely to be used media or application objects as found in **Drewry**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to maximize benefit by reducing latency of networks (column 6, lines 4-7, including objects that "might" be needed).

Claim 10

Robinson disclosed the method of claim 1 wherein the act of maximizing an expected value of downloaded resources includes maximizing an expected value density of downloaded resources *(column 1, lines 25-63, in particular column 1, lines 57-63).*

Claim 11

Robinson did not explicitly state the method of claim 1 wherein the act of maximizing an expected value of downloaded resources includes minimizing an expected cost of not having a needed resource. **Drewry** demonstrated that it was known at the time of invention to minimize an expected cost of not having a needed resource (column 5, line 66 to column 6 line 51, "On the Internet and for Interactive TV (ITV), the networks employed are relatively slow and, thus, incur a high latency (including slow or delayed transmission time) ...", thus prefetching to reduce transmission latency effects; further note column 7, lines 12-20; and caching effectively column 12, line 63 to column 16, line 10). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the web/network based customized advertisement system of **Robinson** with prefetching dependent or likely to be used media or application objects as found in **Drewry**'s teaching. This implementation would

have been obvious because one of ordinary skill in the art would be motivated to maximize benefit by reducing latency of networks (column 6, lines 4-7).

Claim 12

Robinson and **Drewry** disclosed the method of claim 11 wherein the expected cost of not having a needed resource is based on one of enhancement rates of the resources and value densities of the resources *(**Drewry**: column 14, lines 41-47; column 15, lines 38-43).*

Claim 13

Robinson and **Drewry** did not explicitly state the method of claim 12 wherein the enhancement rate of a resource is based on the size of the resource, a probability of that resource being used at least once, and a cost of later downloading the resource. **Cherkasova** demonstrated that it was known at the time of invention to calculate and enhancement rate based upon size, using, and cost of later download (column 3, lines 13-23). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the predictive advertisement delivery system of **Robinson** and the prefetching and caching of **Drewry** with efficient caching schemes as found in **Cherkasova**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to further improve network latency (column 3, lines 13-23).

Claim 14

Robinson and **Drewry** did not explicitly state the method of claim 12 wherein the value density of a resource is based on the size of the resource and the probability that the resource will be used at least once. **Cherkasova** demonstrated that it was known at the time of invention to calculate and enhancement rate based upon size and using (column 3, lines 13-23). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the predictive advertisement delivery system of **Robinson** and the prefetching and caching of **Drewry** with efficient caching schemes as found in **Cherkasova**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to further improve network latency (column 3, lines 13-23).

Claims 15-19 and 21

The limitations of claims 15-19 and 21 are substantially the same as the limitations of claims 1, 3, 8 and 6 and are rejected in the same manner.

Claims 16 and 17

Robinson disclosed changing a storage capacity of the intermediate storage facility based on a change of the expected value *(column 1, lines 52-56; important to use ads in as much space as possible).*

Claim 20

The limitations of claim 20 correspond to the limitations of claim 9 and as such are rejected in the same manner.

7. Claims 22-31, 39-40 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014) in view of **Drewry** et al. (USPN 5,925,100) in view of **Cherkasova** et al. (USPN 6,425,057) and in further view of **Fischer** et al. (USPN 6,438,672).

Claim 22

Robinson and **Drewry** disclosed the limitations of the claim as indicated in claims 1 and 11 above. Further, **Robinson** and **Drewry** disclosed *accepting probabilistic relationships between user based factors and resource based factors* (column 17, lines 1-12). **Robinson** disclosed changing a storage capacity of the intermediate storage facility based on a change of the expected value *(column 1, lines 52-56; important to use ads in as much space as possible).* **Robinson** and **Drewry** did not explicitly state *two storage facilities* or *accepting at least one storage facility-based factor* to base minimizing upon. **Cherkasova** demonstrated that it was known at the time of invention to make use of systems which accept resource-based factors (column 3, lines 20-22), accept storage-based factors (column 3, lines 18-20), and minimize latency to resource

distribution based upon factors (column 3, lines 13-18). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the software distribution system of **Robinson** and **Drewry** with a caching system similar to that described in **Cherkasova**'s teaching based upon factors. This implementation would have been obvious because one of ordinary skill in the art would be motivated to efficiently distribute software without unnecessary work duplication (**Cherkasova**: column 1, line 39 to column 2, line 8).

Cherkasova did not explicitly state *each storage facility having a request-to-receive latency.* **Fischer** demonstrated that it was known at the time of invention to provide multiple caches (column 1, lines 29-52). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the distribution system **Cherkasova** with Two Level Cache as found in **Fischer**'s teaching and thus provide for multiple storage facilities with respective request-to-receive latencies. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a system of increased efficiency of resource/software/object distribution (column 2, liens 13-17; column 1, lines 45-52; lines 56-58).

Claim 23

The limitations of claim 23 correspond to the limitations of claim 3 and as such are rejected in the same manner.

Claim 24

The limitations of claim 24 correspond to the limitations of claim 3 and as such are rejected in the same manner.

Claim 25

The limitations of claim 25 correspond to the limitations of claim 4 and as such are rejected in the same manner.

Claim 26

The limitations of claim 26 correspond to the limitations of claim 6 and as such are rejected in the same manner.

Claim 27

Robinson, Drewry, Cherkasova and **Fischer** disclosed the method of claim 26 wherein the at least one storage facility-based factor includes an available capacity of each of the two storage facilities *(**Cherkasova**: column 3, lines 25-27)* and a relative request-to-receive latency of each of the two storage facilities *(**Cherkasova**: column 3, lines 18-20; **Fischer**: column 1, lines 45-47 and column 2, lines 13-17).*

Claim 28

Robinson, Drewry, Cherkasova and **Fischer** disclosed the method of claim 27 wherein the total expected latencies is a function of the frequencies at which users of the various user type classes will use each of the resources, and a difference between the relative request-to-receive latencies of the two storage facilities *(**Cherkasova**: column 3, lines 13-22; **Fischer**: column 1, lines 56-57).*

Claim 29

Robinson, Drewry, Cherkasova and **Fischer** disclosed the method of claim 22 wherein the at least one storage facility-based factor includes an available capacity of each of the two storage facilities and a relative request-to-receive latency of each of the two storage facilities *(see claim 27).*

Claim 30

The limitations of claim 30 correspond to the limitations of claim 12 and as such are rejected in the same manner.

Claim 31

Robinson, Drewry, Cherkasova and **Fischer** disclosed the method of claim 30 wherein the value densities of the resources are based on the frequency of use [of] the resources and a difference in [request-to-receive] latencies between the

at least two storage facilities *(**Robinson**: column 3, lines 3-15; **Fischer**: column 1, lines 40-52).*

Claim 39

The limitations of apparatus claim 39 correspond to the limitations of method claim 22 and as such are rejected in the same manner. Further, **Robinson** disclosed *means for intelligently downloading resources* (column 1, line 65 to column 2, line 8). **Robinson** disclosed means for evaluating a cost to return resources in non-downloaded condition *(column 1, lines 57-63; column 1, lines 52-56; the cost of not getting the advertisement).*

Claim 40

The limitations of claim 40 correspond to claim 22 and as such are rejected in the same manner. **Robinson** disclosed means for evaluating a cost to return resources in non-downloaded condition *(column 1, lines 57-63; column 1, lines 52-56; the cost of not getting the advertisement).*

Claims 42 and 43

Robinson, Drewry, Cherkasova and **Fischer** did not explicitly state the method of claim 40 further comprising changing a storage capacity of the storage medium based on at least one of a change in value and cost or comprising changing the storage capacity when a ratio of value to cost is

greater than one. Official Notice is taken that it was known at the time of invention to maximize value of a cache to cost. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the caching of the **Robinson, Drewry, Cherkasova** and **Fischer** system with the maximum value (size/speed) of a cache to cost. This implementation would have been obvious because one of ordinary skill in the art would be motivated to get the biggest benefit to the overall design for the money spent.

Claim 44

Robinson, Drewry, Cherkasova and **Fischer** disclosed the method of claim 43 wherein the at least one user-based factor is a function of a time offline until the intermediate storage facility is reconnected with a source. Official Notice is taken that it was known at the time of invention to for systems going offline to increase latency. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the latency of **Cherkasova** with offline considerations. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide the most accurate consideration of all facts concerning utility (cost and latency and whether needed) value.

Claim 45

Robinson, Drewry, Cherkasova and **Fischer** disclosed the method of claim 44 wherein the time offline is a probability distribution considering at least one of (i) resource context, (ii) a user type class, and (iii) a recent usage pattern *(see claim 7).*

8. Claims 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Robinson** (USPN 5,918,014) in view of **Drewry** et al. (USPN 5,925,100) in view of **Cherkasova** et al. (USPN 6,425,057) and in further view of **Fischer** et al. (USPN 6,438,672) in further view of **Ganz** et al. (USPN 6,049,549).

Claims 32-38

The limitations of claims 32-38 correspond to the limitations of claims 1 and 22-31 and as such are rejected in a similar manner in view of rejections of limitations found in claim 1. Further, **Robinson** disclosed *determining a probability of using a resource by a composite user* (column 15, lines 20-29). **Robinson** did not teach using a knapsack procedure. **Ganz** demonstrated that it was known at the time of invention to utilize knapsack algorithms to ensure utility (column 12, lines 36-40). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the utility calculations of **Robinson** with knapsack algorithms as found in **Ganz**'s teaching. This implementation would have been obvious because one of ordinary skill in the

art would be motivated to increase utility and the provide more efficient advertisement.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-40 and 42-45 have been considered but are moot in view of the new ground(s) of rejection.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 10:00am - 4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)-272-3756. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained form either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR systems, see http://pair-direct.uspto.gov. For questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood
Patent Examiner
AU 2193
May 29, 2007